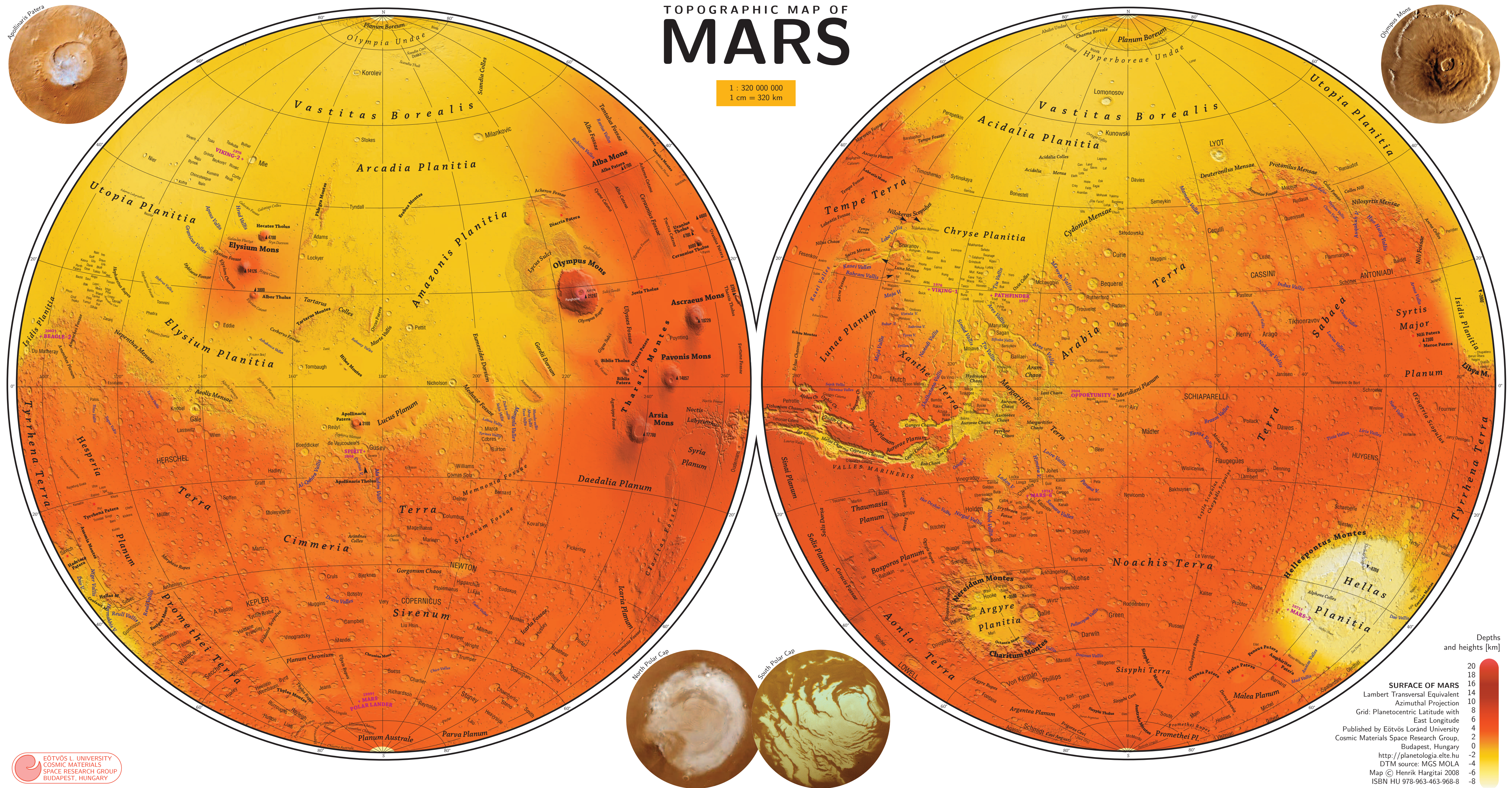


# TOPOGRAPHIC MAP OF MARS

1 : 320 000 000  
1 cm = 320 km



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MARS DATA	
<b>Solar Distance:</b> 206–249 million km	<b>Earth Distance:</b> 54–401 million km
<b>Equatorial Radius:</b> 3396.2 km	<b>Obliquity to orbit:</b> 25°19' (±10°)
<b>Orbital Period:</b> 668.59 Mars Days (=Sols) (=687 Earth Days)	<b>Rotational Period (1 sol):</b> 24h:37m
<b>Gravity:</b> 0.38 g	<b>Length of Equator:</b> 21 300 km
<b>Surface Area:</b> 144.2 million km <sup>2</sup>	<b>Atmosphere:</b> 95% CO <sub>2</sub> ; 2.6% N <sub>2</sub>
<b>Pressure:</b> 6 mbar [min: 0.7–Olympus, max: 12–Hellas]	<b>0. Longitude:</b> Airy-0 crater
<b>Height Datum:</b> 3396 km radius	<b>Distance from Earth at Light speed :</b> 03:02–22:19 min.
<b>Solar Distance:</b> 589.2 W/m <sup>2</sup>	<b>Satellites:</b> Phobos, Deimos

NOMENCLATURE	
Catena, catenae	Crater chain
Cavus, cavi	Hollow/s
Chaos	Chaotic terrain
Chasma	Canyon
Colles	Hills
Dorsum, dorsae	Ridge/s
Fossae, fossae	Trough/s
Labyrinthus	Intersecting troughs
Mensa, mensae	Table mountain/s
Mons, montes	Mountain/s
Planitia, montes	Plains, Basin
Patera	Caldera
Planum	Highland Plain
Rupes	Cliff
Scopulus	Wall
Sulci	Furrows
Terra	Highland
Tholus	Cone
Undae	Dunes
Vallis, valles	Valley/s
Vastitas	Plains

**MARS HISTORY**

**Geochronology** using crater counting (based on Tanaka 2001 and Hartmann 2005, modified)

**Amazonian** ([2-] 3 Ga-today): Little geological activity, local lava flows at Elysium and Tharsis. Ice ages. Periglacial environment. Polar Layered Deposits. Medusae Fossa Formation.

**Hesperian** (3.5-3 Ga) Volcanism (later wrinkle ridges on the lava plains), formation of Valles Marineris rift system, burial of early impact structures of the Northern Lowlands, chaos areas and outflow valleys (for example from Valles Marineris).

**Noachian** (4-3.5 Ga) north-south dichotomy, volcanism, valley networks (warmer climate or local impact heat), giant impact basins (Ares, Hellas, Argyre, Isidis, Utopia, Chryse) 4 Ga ago, „Pre-Noachian“ (4.5-4 Ga): ancient (today buried) basins (QCDs), early heavy bombardment, permanent magnetosphere.

**Geochemical chronology** (based on Bibring et al. 2006)

**Siderikian:** 3.8 Ga-today: Cold, Dry climate. Water and volcanism has little effect. Rocks oxidize slowly (Fe(III)-oxide, hematite - Fe<sub>2</sub>O<sub>3</sub>); Mars gets its red color.

**Theikian:** 4.2-3.8 Ga: Volcanic activity pumps SO<sub>2</sub> to the atmosphere, which reacts with water and created acidic rains, which weather rocks.

**Phylloclian:** 4.5-4.2 Ga: Warm, wet climate, phyllosilicates (clay minerals) on the bottom of lakes or underground from hydrothermal activity or impact of icy bodies.

